

WHAT IS CLAIMED IS:

1. A hose comprising:

(1) a rubber layer comprising an FKM fluoroelastomer; and

5 (2) a barrier layer comprised of a thermoplastic quadpolymer derived from (i) tetrafluoroethylene, (ii) vinylidene fluoride, (iii) at least one ethylenically unsaturated monomer of the formula $\text{CF}_2=\text{CFR}_f$ where R_f is a perfluoroalkyl or a perfluoroalkoxy of 1 to 8 carbon atoms, and (iv) a perfluorovinyl ether of the formula $\text{CF}_2=\text{CF}-(\text{OCF}_2 \text{CF}(\text{R}_f))_a \text{OR}'_f$, where R_f is as described in (iii), R'_f is a perfluoroaliphatic, preferably a perfluoroalkyl or a perfluoroalkoxy, of 1 to 8, preferably 1 to 3, carbon atoms, and a has a value of 0 to 3;

10 wherein the barrier layer is adhered to the rubber layer with an adhesive amount of a thermoplastic terpolymer of tetrafluoroethylene, hexafluoropropylene and vinylidene fluoride.

2. The hose of claim 1 wherein the thermoplastic quadpolymer contains interpolymers derived from tetrafluoroethylene, hexafluoropropylene and vinylidene fluoride, and a perfluorovinyl ether having an "a" value of 0, 1 or 2.

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3. The hose of claim 1 wherein the thermoplastic quadpolymer contains interpolymers derived from tetrafluoroethylene, hexafluoropropylene, vinylidene fluoride and a perfluorovinyl ether of the formula PPVE1 or PPVE2:

25 $\text{CF}_2=\text{CFOCF}_2\text{CF}_2\text{CF}_3$ PPVE1

$\text{CF}_2=\text{CFOCF}_2\text{CFOCF}_2\text{CF}_2\text{CF}_3$ PPVE2
|
 CF_3

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4. The hose of claim 1 wherein said thermoplastic quadpolymer comprises from about 40 to 80 weight percent tetrafluoroethylene; from about 10 to 30 weight percent vinylidene fluoride, from about 5 to 40 weight percent of a comonomer of the formula $\text{CF}_2=\text{CFR}_f$; and from about 0.1 to 15 weight percent of the perfluorovinyl ether of the formula $\text{CF}_2=\text{CF}-(\text{OCF}_2 \text{CF}(\text{R}_f))_a \text{OR}'_f$.

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5. The hose of claim 1, wherein said FKM fluoroelastomer comprises about 0 to 70 parts by weight tetrafluoroethylene, about 20 to 50 parts by weight hexafluoropropylene and about 20 to 80 parts by weight vinylidene fluoride, based on 100 parts by weight of FKM.

6. The hose of claim 1, wherein said thermoplastic terpolymer of tetrafluoroethylene, hexafluoropropylene and vinylidene fluoride comprises about 30-75 weight percent tetrafluoroethylene, about 5-40 weight percent hexafluoropropylene and about 5-55 weight percent vinylidene fluoride.

7. The hose of claim 1 wherein said hose further comprises an outer cover made of a material selected from the group consisting of (a) elastomeric materials and (b) reinforcement material.

8. The hose of claim 7 wherein said elastomer that comprises said outer cover is selected from the group consisting of chlorosulfonated polyethylene, chlorinated polyethylene, acrylonitrile-butadiene rubber/PVC blends, epichlorohydrin, EPDM, chloroprene, EVA, ethylene acrylic elastomer and EVM.

9. The hose of claim 7 wherein said reinforcement material is from textile yarns of polyester, nylon, rayon and aramid.

10. The hose of claim 1 wherein the rubber layer comprising FKM rubber is the innermost layer of the hose.

11. The hose of claim 1 wherein the barrier layer is the innermost layer of the hose.

12. The hose of claim 9 wherein the inside diameter of the innermost layer ranges from 3 to 100 mm.

13. The hose of claim 10 wherein the inside diameter of the innermost layer ranges from 3 to 100 mm.

14. The hose of claim 10 wherein the thickness of the innermost layer ranges of from about 0.1 to 8 mm.

5 15. The hose of claim 10 wherein the thickness of the innermost layer ranges form about 0.5 to 4 mm.

16. The hose of claim 1 wherein the thickness of the barrier layer ranges from about 0.1 to 1 mm.

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17. The hose of claim 1 wherein the thickness of the barrier layer ranges from about 0.15 to 0.5 mm.

18. The hose of claim 7 wherein the thickness of the outer cover made of
15 elastomeric materials ranges from about 0.1 to 10 mm.

19. The hose of claim 1 wherein the adhesive amount of terpolymer is disposed as a layer having a thickness of between about 0.01 and 0.1 mm.

20 20. The hose of claim 1 wherein the adhesive amount of terpolymer is disposed as a layer having a thickness of between about 0.02 and 0.08 mm.